I CLAIM:

1. A method for selecting samples having specified properties from a library of samples, the method comprising:

   a. providing a platen having two substantially parallel planar surfaces and a plurality of addressable through-holes disposed substantially perpendicularly to the planar surfaces;

   b. loading a first sample in liquid form into at least one of the through-holes;

   c. adding a second sample into the at least one of the through-holes for permitting a reaction between the first sample and the second sample; and

   d. characterizing the reaction in the through-hole in terms of the specified properties.

2. A method according to claim 1, wherein each through-hole is dimensioned so as to maintain a liquid sample therein by means of surface tension.

3. A method according to claim 1, wherein each through-hole has a volume less than 100 nanoliters.

4. A method according to claim 1, wherein the plurality of addressable through-holes has a density in excess of $10^8$ per square meter.

5. A method according to claim 1, wherein the first sample in liquid form includes at least one of a target in solution and a target in suspension.

6. A method according to claim 2, wherein the at least one of a target in solution and a target in suspension includes a biological material.

7. A method according to claim 1, wherein the step of loading a first sample includes drawing the sample from a planar surface by capillary action.

8. A method according to claim 1, wherein the step of loading a first sample includes bringing the platen into contact with a reservoir of liquid and rotating the platen about an axis perpendicular to the surface of the reservoir.

9. A method according to claim 1, wherein the step of loading a first sample includes bringing the platen into contact with a reservoir of liquid and rotating the platen about at least one of an axis perpendicular to the surface of the reservoir and an axis parallel to the surface of the reservoir.

10. A method according to claim 1, wherein the step of loading a first sample includes

bringing the platen into contact with a reservoir of liquid and impelling the platen in a direction substantially perpendicular to the planar surfaces of the platen.

**11.** A method according to claim 1, further including maintaining a humid atmosphere for preventing evaporation of the first sample.

**12.** A method according to claim 1, further including coating the liquid sample with a monolayer for preventing evaporation of the first sample.

**13.** A method according to claim 1, wherein the step of characterizing the reaction in the through-hole in terms of the specified properties includes optically analyzing the sample.

**14.** A method for characterizing a plurality of liquid samples, the method comprising:

a. providing a platen having a set of through-holes;

b. loading a specified liquid sample into each of a subset of the set of through-holes; and

c. characterizing a property of the specified liquid sample.

**15.** A method according to claim 14, the step of characterizing a property of the specified liquid sample comprising:

a. illuminating at least one through-hole of the subset of the set of through-holes with optical radiation; and

b. analyzing the optical radiation emanating from the at least one through-hole.

**16.** A method for analyzing a plurality of liquid samples, the system comprising:

a. loading the liquid samples into a plurality of through-holes disposed in a platen;

b. illuminating at least one through-hole with optical radiation; and

c. analyzing the optical radiation emanating from the at least one through-hole.

**17.** A method in accordance with claim 16, wherein the step of analyzing includes spectrally characterizing the optical radiation emanating from the at least one through-hole.

**18.** A method for preparing a plurality of combinations of members of a first set of samples in liquid form with members of a second set of samples in liquid form, the method comprising:

a. providing a first perforated platen having through-holes and a second

perforated platen having through-holes;

b. loading a first set of samples in liquid form into the through-holes of the first perforated platen;

c. loading a second set of samples in liquid form into the through-holes of the second perforated platen;

d. registering the through-holes of the first perforated platen with the through-holes of the second perforated platen; and

e. combining the first set of samples with the second set of samples.

**19.** A method according to claim 18, wherein the step of combining includes inertially injecting the first set of samples into the through-holes of the second perforated platen.

**20.** A method for mixing a plurality of liquid samples, the method comprising:

a. loading a first set of liquid samples into a plurality of through-holes disposed in a first platen, the platen having a first substantially planar surface and a second substantially planar surface, the surfaces being substantially parallel to each other;

b. loading a second set of liquid samples into a plurality of through-holes disposed in a second platen, the platen having a first substantially planar surface and a second substantially planar surface, the surfaces being substantially parallel to each other;

c. disposing the first planar surface of the first platen in contact with the first planar surface of the second planar surface in such a manner that at least one through-hole of the first set is in registration with at least one through-hole of the second first set.

**21.** A method according to claim 20, wherein the first set of liquid samples includes a solute dissolved in a solvent and the second set of liquid samples includes a solvent, such that the concentration of solute in the first set of liquid samples is diluted upon performance of the step of disposing.

**22.** A method according to claim 20, further comprising:

d. mixing a liquid of the first set of liquid samples with a liquid of the second set of liquid samples.

**23.** A method according to claim 22, wherein the step of mixing includes inducing turbulence within the liquid by optical means.

**24.** A method according to claim 22, wherein the step of mixing includes inducing turbulence within the liquid by acoustic means.

**25.** A method according to claim 22, wherein the step of mixing includes inducing turbulence within the liquid by mechanical means.

**26.** A method for transporting biological samples, the method comprising:

a. providing a platen having a set of substantially cylindrical through-holes having walls;

b. loading the biological samples suspended in a liquid carrier into the through-holes; and

c. evaporating the liquid carrier for causing the biological samples to deposit on the walls of the through-holes.

**27.** A perforated platen having substantially parallel planar surfaces for manipulating liquid samples, the platen comprising:

a. an inner layer of hydrophilic material;

b. two outer layers of hydrophobic material coupled to opposite sides of the inner layer; and

c. through-holes for retaining the liquid samples, the through-holes traversing the inner layer and the two outer layers in a direction substantially perpendicular to the planar surfaces of the platen.

**28.** A system for analyzing a plurality of liquid samples, the system comprising:

a. a platen having two substantially parallel planar surfaces and a plurality of through-holes having apertures and walls;

b. a source of optical radiation for illuminating at least one through-hole along an optical axis; and

c. an optical arrangement for analyzing light emanating from the at least one through-hole.

**29.** A system according to claim 28, wherein the apertures of the plurality of through-holes are disposed on centers of a hexagonally close-packed lattice on the surface of the platen.

**30.** A system according to claim 28, wherein the apertures of the plurality of through-holes are disposed on centers of a rectangular lattice on the surface of the platen.

**31.** A system according to claim 28, wherein the through-holes have an aspect ratio of axial to transverse dimension of greater than 1.5.

**32.** A system according to claim 28, wherein the volume enclosed by the wall of each through-hole and the planes of the planar surfaces of the platen is less than 100 nanoliters.

**33.** A system according to claim 28, wherein the wall of each through-hole is in part hydrophilic and in part hydrophobic.

**34.** A system according to claim 28, wherein the wall of each through-hole comprises:

a. a central hydrophilic segment; and

b. two hydrophobic segments such that one hydrophobic segment extends from the central hydrophilic segment to each planar surface of the platen.

**35.** A system according to claim 28, wherein the platen is a laminate having a central hydrophilic layer and two outer hydrophobic layers disposed on opposite sides of the central hydrophilic layer.

**36.** A system according to claim 28, wherein the platen is a metal.

**37.** A system according to claim 28, wherein the platen is a material selected from the group consisting of amorphous materials, ceramic, glass, quartz, and glassy carbon.

**38.** A system according to claim 28, wherein the platen is a polymeric material.

**39.** A system according to claim 28, wherein the walls of the plurality of through-holes are coated for allowing emission of light from the through-holes only at the planar surfaces of the platen.

**40.** A system according to claim 28, further including an advancement mechanism for translating the platen in a direction perpendicular to the optical axis.

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